This report covers the drinking water quality for the Traverse City Water System for the calendar year 2020. Included are details about where your water comes from, what it contains and how it compares to Environmental Protection Agency (EPA) and state standards.

Your water is surface water and comes from the East arm of Grand Traverse Bay. The State performed an assessment of our source water in 2004. A determination of sensitivity and susceptibility to contamination was made by reviewing our source water geology, intake location, water chemistry, and potential contaminant sources within the source water area. The State has determined that our source water has a moderate geologic sensitivity with a moderate susceptibility to contamination. A copy of this report, *Source Water Assessment Report for the City of Traverse City Water Supply April 2004* may be reviewed on the City of Traverse City website *www.traversecitymi.gov* or by contacting the Traverse City Utility Accounting Office at the Governmental Center located at 400 Boardman Avenue, Traverse City, MI 49684 (231) 922-4431.

Contaminants and their presence in water: Drinking Water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the **EPA's Safe Drinking Water Hotline (800) 426-4791**.

Vulnerability of sub-populations: Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800) 426-4791.

Sources of drinking water: The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. Our water comes from Lake Michigan. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

* **Microbial contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
* **Inorganic contaminants**, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.
* **Pesticides and herbicides**, which may come from a variety of sources such as agriculture and residential uses.
* **Radioactive contaminants**, which can be naturally occurring or be the result of oil and gas production and mining activities.
* **Organic chemical contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes, petroleum production, and can also come from gas stations, urban stormwater runoff and septic systems.

In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water which provide the same protection for public health.

Information about lead:

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Traverse City Water Plant is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at (800) 426-4791 or *http://www.epa.gov/safewater/lead.*

Infants and children who drink water containing lead could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

There are no known lead service lines in the city of Traverse City and two lead goosenecks are connected to galvanized service lines.

Water Quality Data

The table below lists all the drinking water contaminants that were detected during the 2020 calendar year. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing performed January 1, 2020 to December 31, 2020. The State allows monitoring for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. All of the data is representative of the water quality, but some of the data is more than one year old.

Samples collected at the Water Plant

Regulated Contaminant	MCL	MCLG	Level Detected	Range	Year Sampled	Vioation Yes/No	Typical Source of Contaminant
Fluoride (ppm)	4	4	1.0	N/A	2020	No	Water additive that promotes strong teeth; erosion
Nitrate (ppm)	10	10	0.23	N/A	2020	No	Erosion of natural deposits
Combined Radium (pCi/L)	5	0	0.715 +- 0.363	N/A	2020	No	Erosion of natural deposits

*Special Monitoring and Unregulated Contaminants	Level Detected	Range	Year Sampled	Typical Source of Contaminant
Chloride (ppm)	15	N/A	2020	Erosion of natural deposits
Chlorate (ppm)	0.050	0.033 - 0.066	2015	Byproduct of drinking water disinfection
Chromium-6 (ppb)	0.193	0.018 - 0.27	2015	Erosion of natural deposits
Molybdenum (ppb)	1.05	1 - 1.1	2015	Erosion of natural deposits
Sodium (ppm)	20.7	N/A	2020	Erosion of natural deposits
Strontium (ppb)	98.52	1.09 - 122	2015	Erosion of natural deposits
Sulfate (ppm)	36	N/A	2020	Erosion of natural deposits
Vanadium (ppb)	0.49	0.34 - 0.64	2015	Erosion of natural deposits

* Unregulated contaminants are those for which EPA has not established drinking water standards. Monitoring helps EPA to determine where certain contaminants occur and whether it needs to regulate those contaminants.

Samples collected at the Water Plant

Regulated Substance	MCL/MCLG	Turbidity lowest monthly % of samples meeting limit of 0.3 NTU (minimum 95%)	Range	Sample Frequency	Vioation Yes/No	Typical Source of Contaminant
Turbidity (NTU)	TT	100%	0.5 - 0.14	Daily	No	Soil runoff

Regulated Substance	MCL/MCLG	Sample Frequency	Vioation Yes/No	Typical Source of Contaminant
4-hour CFE Turbidity	TT	Daily - four hour intervals	No	Soil runoff

Samples collected in the Distribution System

Regulated Contaminant	MCL	MCLG	Level Detected	Range	Year Sampled	Vioation Yes/No	Typical Source of Contaminant
TTHM - Total Trihalomethanes (ppb)	80	N/A	33.9	21.7 - 64.0	2020	No	By-products of drinking water disinfection
HAA5 - Haloacetic Acids (ppb)	60	N/A	14.2	11.0 - 20.1	2020	No	By-products of drinking water disinfection
Chlorine (ppm)	4	4	0.91	0.57 - 1.13	2020	No	Water additive used to control microbes

Samples collected at Customer Tap

Regulated Contaminant	Action Level	MCLG	90th Percentile Value	Range of Individual Results	Year Sampled	Number of Samples Above AL	Typical Source of Contaminant
Lead (ppb)	15	0	1	0 - 23	2019	1**	Lead service lines, corrosion of household plumbing including fittings and fixtures; Erosion of natural deposits
Copper (ppm)	1.3	1.3	0.1	0.0 - 0.3	2019	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

**Sample was taken from a faucet that was rarely used.

Service Line Material Present in Distribution System

Lead	Galvanized with Previous Lead	Unknown Likely Lead	Unknown Likely Not Lead	Unknown	No Lead or Galvanized Previous Lead	Total
2	806	249	1530	0	4876	7463

Terms and abbreviations used in tables:

- **Maximum Contaminant Level Goal (MCLG)**: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
- **Maximum Contaminant Level (MCL)**: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
- **Maximum Residual Disinfectant Level (MRDL)**: The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- **Maximum Residual Disinfectant Level Goal (MRDLG)**: The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.
- **N/A**: Not Applicable
- **ppb**: parts per billion or micrograms per liter
- **ppm**: parts per million or milligrams per liter
- **Action Level (AL)**: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
- **Combined Filter Effluent (CFE):** Treated water after filtration.
- **Nephelometric Turbidity Units (NTU)**: The measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.
- **Treatment Technique (TT)**: A required process intend to reduce the level of a contaminant in drinking water.

Water Treatment Plant Capital Improvements: In 2020, the City completed the following improvements to the Water Treatment Plant and Water Distribution System. These improvements help to protect public health, safety and welfare and serve to enhance water reliability. 2020 projects included:

- **Completed rehabilitation of the Barlow 4 MG reservoir:** Maintenance and repair of the existing Barlow reservoir began in the fall of 2019. The project included complete interior and exterior coatings removal and replacement, installation of a new 24-inch outlet pipe to connect to the outlet works of the newly constructed adjacent 2 MG reservoir, a new tank mixer, new cathodic protection system (anti-corrosion) and upgraded safety features for a total cost $1.1M. The project was completed in May 2020.

- **Water system leak detection field analysis**: The west half of the City water mains (59 miles) was completed in 2019 and the east half (60 miles) was completed in 2020. Overall results were good with only finding a few minor leaks which were repaired.

- **High and low service pump repairs/upgrades:** Provides for the replacement/rewinding of motors and the installation of variable frequency drives (VFDs) on pumps. VFDs allow significant energy savings and versatile operation to meet varying water demands. $82,200 was invested to repair two high service pumps and install a VFD in 2020 to restore reliability.

- **Water Treatment Plant Natural Stone Boulder Security Barrier**: Approximately $17,400 was invested to provide security at the Water Plant.

- **Randolph Street Reconstruction Project**: Installed 172 feet of 8 and 12-inch water main on Randolph Street with this street reconstruction project investing $275,000 from the Water fund.

- **Replaced main electrical switchgear**: The Water Treatment Plant had the main electrical switchgear replaced to increase electrical reliability for $32,000.

- **Rebuilt Filter #5 valve actuator** : The valve actuator for Filter #5 was replaced and the old actuator was rebuilt to use as a spare at a cost of $11,500.

- **EPA Unregulated Contaminant Monitoring Rule (UCMR) Sampling:** Participated in the EPA's monthly drinking water sampling program that tests for suspected contaminants in drinking water that do not have health-based standards set under the Safe Drinking Water Act (SDWA).

We will update the Water Quality Report annually and will keep you informed if there are any issues that occur during the year, as required. Copies of this report are available at the Governmental Center at 400 Boardman Avenue, the Traverse City Water Plant at 2010 Eastern Avenue and the Department of Public Services Building at 625 Woodmere Avenue in Traverse City.

We invite public participation in decisions that affect drinking water quality. City Commission meetings are conducted on the first and third Mondays of each month in the Commission Chambers of the Governmental Center at 400 Boardman Avenue, where public comment is welcome.

For more information about your water, or the contents of this report, contact Jacqueline Johnson, Water Plant Superintendent at (231) 922-4920 or email at *jjohnson@traversecitymi.gov*. For more information about safe drinking water, visit the US Environmental Protection Agency at *www.epa.gov/safewater/*.

Correction Statement

Our 2019 Water Quality Report did not include a portion of the mandatory health effects language which is required if one or more lead result is above the action level (AL). There was one sample taken from a rarely-used faucet, which had a lead result above the AL. Therefore, the following language should have been included in the 2019 report:

"Infants and children who drink water containing lead could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure."